

Claims:

1       1. A distributed search method in a peer-to-peer computer network comprising a  
2 resource requestor, at least one search broker, and at least one resource provider where said at  
3 least one search broker has a registration database for said at least one resource provider, said  
4 method comprising:

5            sending a resource query from said resource requestor; to a resource broker;  
6            locating a resource provider on the network matching said resource query;  
7            sending said resource query from said resource broker to said resource provider matching  
8 said resource query;

9   processing said resource query at said resource provider matching said resource query;  
10  and  
11   returning search results from said resource provider matching said resource query to said  
12 resource requestor.

1       2. The method of Claim 2 further comprising locating one or more search brokers in  
2 said computer network.

1       3. The method of Claim 2 further comprising forwarding a resource description from  
2 said resource provider to said resource broker.

1       4. The method of Claim 3 further comprising ranking said search results at said  
2 resource requestor.

1       5. The method of Claim 4 wherein said resource description comprises types of  
2 resources.

1       6. A computer program product for use in conjunction with a distributed network  
2 comprising a resource requestor, at least one search broker and at least one resource provider, the  
3 computer program product comprising a computer readable storage medium and a computer  
4 program mechanism embedded therein, the computer program mechanism comprising:  
5            first instructions for sending a resource query executable by said resource requestor;

6 second instructions executable by said search broker for registering said resource  
7 provider;

8 third instructions executable by said search broker for finding said resource provider  
9 matching said resource query;

10 fourth instructions executable by said search broker for sending said resource query to  
11 said resource provider; and

12 fifth instructions executable by said resource provider for finding resources available  
13 matching said resource query.

1 7. The computer program product of Claim 6 further comprising

2 sixth instructions executable by said resource provider for sending search results to said  
3 resource requestor.

1 8. The computer program product of Claim 7 further comprising

2 seventh instructions executable by said resource provider for finding search brokers in  
3 said computer network.

1 9. The computer program product of Claim 8 further comprising

2 eighth instructions executable by said resource provider for obtaining a resource  
3 description.

1 10. The computer program product of Claim 6 further comprising

2 ninth instructions executable by said resource provider for sending a resource query to a  
3 computer coupled to said resource provider.

1 11. A resource search method for a computer network having a plurality of computers  
2 comprising a resource requestor, at least one search broker, and at least one resource provider,  
3 said method comprising:

4 registering said resource provider with said search broker;

5 sending a resource query from said resource requestor to said search broker;

6 sending said resource query from said search broker to said resource provider;

7 searching said resource provider for local resources based on said resource query; and

8 sending search results from said resource provider to said resource requestor.

1 12. The search method of Claim 11 further comprising  
2 sending said resource query from said resource provider to a computer coupled to said  
3 resource provider.

1 13. The search method of Claim 11 further comprising  
2 generating at said search broker a registration database for said resource provider.

1 14. The search method of Claim 13 further comprising  
2 determining whether said resource provider contains a resource that matches said  
3 resource query.

1 15. The search method of Claim 14, wherein said resource query comprises  
2 a keyword.

1 16. The search method of Claim 15 further comprising selecting said resource  
2 provider based on said keyword of said resource query.

1 17. A computer program product for use in conjunction with a distributed network  
2 comprising a resource requestor, at least one search broker and at least one resource provider, the  
3 computer program product comprising a computer readable storage medium and a computer  
4 program mechanism embedded therein, the computer program mechanism comprising:

5 first instructions for registering said resource provider with said search broker;  
6 second instructions for sending a resource query from said resource requestor to said  
7 search broker;

8 third instructions for sending said resource query from said search broker to said resource  
9 provider;

10 fourth instructions for searching said resource provider for local resources based on said  
11 resource query; and

12 fifth instructions for sending search results from said resource provider to said resource  
13 requestor.

1       18. The computer program product of Claim 17 further comprising sixth instructions  
2 for sending said resource query from said resource provider to a computer coupled to said  
3 resource provider.

1       19. The computer program product of Claim 17 further comprising  
2 sixth instructions for generating at said search broker a registration database for said  
3 resource provider.

1       20. The computer program product of Claim 19 further comprising  
2 seventh instructions for determining whether said resource provider contains a resource  
3 matching said resource query.

1       21. The computer program product of Claim 20 wherein said resource query  
2 comprises a keyword.

1       22. The computer program product of Claim 21 further comprising eighth instructions  
2 for selecting said resource provider based on said keyword of said resource query.

1       23. The computer program product of Claim 22 further comprising ninth instructions  
2 for ranking said search results at said resource requestor.

1       24. A computer network having a plurality of computers comprising a resource  
2 requestor, at least one search broker, and at least one resource provider, each computer on said  
3 computer network comprising an application programming interface (API), said API comprising;  
4       a resource-finding method executable by said resource requestor, said resource-finding  
5 method comprising a resource query;

6       a resource-provider-finding method executable by said search broker for finding said  
7 resource provider matching said resource query,

8       a resource-provider-registering method executable by said search broker for registering  
9 said resource provider; and

10       a local-resource-finding method executable by said resource provider for finding

11 resources available on said resource provider.

1 25. The computer network of Claim 24 wherein said API further comprising:  
2 a search broker finding method executable by said resource provider for finding said  
3 search broker.

1 26. A resource search method for a computer network having computers comprising a  
2 resource requestor, a plurality of search brokers, and a plurality of resource providers, said  
3 method comprising:

4 registering said plurality of resource providers with said plurality of search brokers;  
5 sending a resource query from said resource requestor to at least a subset of said plurality  
6 of search brokers;  
7 sending said resource query from said subset of said plurality of search brokers to at least  
8 a subset of said plurality of resource providers;  
9 searching for local resources based on said resource query; and  
10 sending search results from said subset of said plurality of resource providers to said  
11 resource requestor.

1 27. The search method of Claim 26 further comprising  
2 sending said resource query from a resource provider to a computer coupled to said  
3 resource provider.

1 28. The search method of Claim 26 further comprising  
2 generating at said plurality of search brokers registration databases for said plurality of  
3 resource providers.

1 29. The search method of Claim 28 further comprising  
2 determining whether said subset of said plurality of resource providers contains a  
3 resource that matches said resource query.

1 30. The search method of Claim 29, wherein said resource query comprises  
2 a keyword.

1       31.     The search method of Claim 30 further comprising selecting a resource provider  
2     based on said keyword of said resource query.

1       32.     A computer program product for use in conjunction with a distributed network  
2     comprising a resource requestor, a plurality of search brokers and a plurality of resource  
3     providers, the computer program product comprising a computer readable storage medium and a  
4     computer program mechanism embedded therein, the computer program mechanism comprising:  
5             first instructions for registering said plurality of resource providers with said plurality of  
6     search brokers;

7             second instructions for sending a resource query from said resource requestor to at least a  
8     subset of said plurality of search brokers;

9             third instructions for sending said resource query from said subset of said plurality of  
10    search brokers to at least a subset of said plurality of resource providers;

11             fourth instructions for searching for local resources based on said resource query; and

12             fifth instructions for sending search results from said subset of said plurality of resource  
13    providers to said resource requestor.

1       33.     The computer program product of Claim 32 further comprising sixth instructions  
2     for sending said resource query from a resource provider to a computer coupled to said resource  
3     provider.

1       34.     The computer program product of Claim 32 further comprising  
2             sixth instructions for generating at said plurality of search brokers registration databases  
3     for said plurality of resource providers.

1       35.     The computer program product of Claim 34 further comprising  
2             seventh instructions for determining whether said subset of said plurality of resource  
3     providers contains a resource that matches said resource query.

1       36.     The computer program product of Claim 35 wherein said resource query  
2     comprises a keyword.

1           37. The computer program product of Claim 36 further comprising eighth instructions  
2 for selecting a resource provider based on said keyword of said resource query.